BU College of Engineering

Computer Engineering – Class of 2028 (133 units)
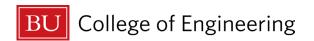
First-year 1

CAS MA 123 — Calculus I — QR2;CRT — **4**

Natural Sci Elective — **4**

ENG EK 100 — First-year Seminar

ENG EK 121 — Intro Prog — **2**

CAS WR 120 — Writing Seminar — FYW — **4**

First-year 2

CAS MA 124 — Calculus II — QR2;SI2;CRT — **4**

CAS PY 211 — Physics I — SI1;QR1;CRT;TWC — **4**

ENG EK 131 — Intro to Eng — **2**

ENG EK 122 — Prog for Eng — CRI — **2**

ENG EK 103 — Comp Lin Alg — **3**

CAS WR 15x — Writing & Res — WRI; RIL — **4**

Sophomore 1

CAS MA 225 — Multivar Calculus — QR2;CRT — **4**

CAS PY 212 — Physics II — SI2;QR2;CRT;TWC — **4**

ENG EK 307 — Electric Circuits — **4**

ENG EC 327 — Intro Softw Eng — **4**

CAS MA 193 — Intro Discr Math — CRT — **2**

Sophomore 2

CAS MA 226 — Diff Equ — CRT — **4**

ENG EC 311 — Intro Logic Des — **4**

ENG EK 301 — Eng Mechanics — CRT; CRI — **4**

ENG EK 210 — Intro Eng Des — TWC — **2**

ENG EC 330 — Appl Alg for Eng — **4**

Junior 1

ENG EK 381 — Prob, Stats & DS — QR2; CRT — **4**

ENG EC 413 — Comp Organiz — **4**

CE Core Elective — **4**

Hub Elective — **4**

Junior 2

EE Breadth Elective — **4**

Computer Eng Elective — **4**

CE Core Elective — **4**

Hub Elective — **4**

Senior 1

Computer Eng Elective — **4**

Technical Elective — **4**

ENG EC 463 — Senior Design I — WIN;DME;RIL — **4**

Hub Elective — **4**

Senior 2

Technical Elective — **4**

Technical Elective — **4**

ENG EC 464 — Senior Design II — WIN;OSC — **4**

Hub Elective — **4**

Notes

- Grey box = either semester
- ——→ = prerequisite; ----→ = corequisite
- Students planning to **study abroad** sophomore 2 should take EK 301 in sophomore 1.
- Students must complete 48 units of upper-division program coursework (not including Hub or writing).
- See back for Hub Unit Legend

Hub Electives: must include all Hub requirements below to fulfill degree requirements:

- ☐ 1. Philosophical Inquiry & Life's Meanings (PLM)
- ☐ 2. Aesthetic Exploration (AEX)
- ☐ 3. Historical Consciousness (HCO)
- ☐ 4. Social Inquiry (SO1 or SO2)
- ☐ 5. Individual & Community (IIC)
- ☐ 6. First Global Citizenship & Intercultural Literacy (GCI)
- ☐ 7. Second Global Citizenship & Intercultural Literacy (GCI)
- ☐ 8. Ethical Reasoning (ETR)

☐ Total of at least 16 units

6/12/2025

REQUIREMENTS
Computer Engineering (CE) majors are required to complete a minimum of 133 units as detailed on the Program Planning Sheet on the other side of this page.

HUB ELECTIVES
All students are required to complete a total of 26 Hub requirements. Eighteen of these Hub requirements are incorporated into courses required for the EE BS degree. The remaining eight Hub requirements must be satisfied through four (or more) Hub Electives that incorporate the following seven Hub areas: Philosophical Inquiry; Aesthetic Exploration; Historical Consciousness; Social Inquiry; Individual in Community; Ethical Reasoning; Global Citizenship & Intercultural Literacy (2X). Search for courses that fulfill specific combinations of Hub requirements at: https://www.bu.edu/phpbin/course-search/

NATURAL SCIENCE ELECTIVE
CE majors complete one Natural Science Elective (4 units) from the following list:

CAS AS 202 Principles of Astronomy 1	CAS CH 131 Gen Chem for the Eng Sci	CAS PY 321 & 322 Thermal Physics (2 units) &
CAS BI 107 Biology 1	CAS PY 313 Waves and Modern Physics	Quantum Physics (2 units) (Madrid)
CAS BI 108 Biology 2	CAS PY 314 Waves and Modern Physics (Grenoble)	CAS PY 451 Quantum Physics 1
CAS CH 101 General Chemistry 1		

CORE ELECTIVE
CE majors complete two Core Electives (8 units) from the following list:

ENG EC 401 Signals and Systems	ENG EC 440 Introduction to Operating Systems	ENG EC 444 Smart and Connected Systems
ENG EC 410 Introduction to Electronics	ENG EC 441 Introduction to Computer Networking	

COMPUTER ENGINEERING ELECTIVE
CE majors complete two Computer Engineering Elective courses (8 units) from the following list:

ENG EC 440 Introduction to Operating Systems	ENG EC 530 Software Engineering Principles	CAS CS 411 Software Engineering
ENG EC 441 Intro to Computer Networking	ENG EC 531 Full-Stack Software at Scale	CAS CS 505 Natural language processing
ENG EC 444 Smart & Connected Systems	ENG EC 535 Introduction to Embedded Systems	CAS CS 511 Formal Methods
ENG EC 447 Software Design	ENG EC 541 Computer Communications Networks	CAS CS 525 Compiler Design
ENG EC 504 Advanced Data Structures	ENG EC 544 Network Physical World	CAS CS 530 Advanced Algorithms
ENG EC 512 Enterp Client-Server Softwr Sys Des	ENG EC 545 Cyber Physical Systems	CAS CS 535 Complexity Theory
ENG EC 513 Computer Architecture	ENG EC 551 Adv Digital Design w/ Verilog & FPGA	CAS CS 538 Fundamentals of Cryptography
ENG EC 518 Robot Learning	ENG EC 552 Computational Synthetic Biology	CAS CS 548 Cryptography
ENG EC 521 Cybersecurity	ENG EC 571 Digital VLSI Circuit Design	CAS CS 552 Operating Systems
ENG EC 526 Parallel Prog for High Perf & Big Data	CAS CS 320 Concepts of Programming Languages	CAS CS 558 Computer Network Security
ENG EC 527 High Perf Prog w/ Multicore & GPUs	CAS CS 350 Fundamentals of Computing Systems	CAS CS 562 Database Applications
ENG EC 528 Cloud Computing	CAS CS 410 Advanced Software Systems	CAS CS 565 Data Mining

EE BREADTH ELECTIVE
CE majors complete one EE Breadth Elective course (4 units) from the following:

EC 401, EC 410, EC 455 as well as any course that appears on the EE planning sheet as an EE Core Elective except for EC 541 and EC 571.

TECHNICAL ELECTIVES
(see **Notes** below) CE majors complete three Technical Elective courses (12 units) from the following:

Any course listed as **Computer Engineering Elective**

ENG BE 209 and any **ENG EC**, **BE, EK** or **ME** course at the 300-level or above, except for 600-level courses and EK 409, are acceptable as Technical Electives (no more than 4 units of ENG EC 451 can be used).

Approved Courses Outside Engineering that fulfill a Technical Elective:

CAS AS 414 Solar and Space Physics	CAS MA 583 Introduction to Stochastic Processes	<u>No more than two of the following:</u>
CAS CS 440 Intro to Artificial Intelligence	CAS PY 313 Waves and Modern Physics	QST SI 480 The Business of Technology Innovation
CAS CS 480 Introduction to Computer Graphics	CAS PY 314 Waves and Modern Physics (Grenoble)	QST SI 482 Technology and its Commercialization
CAS CS 585 Image and Video Computing	CAS PY 321 & 322 Thermal Physics (2 units) &	HUB XC 433 D1 Art&Sci Tech Cnsltng (F24 & Sp25)
CAS MA 511 Introduction to Analysis	Quantum Physics (2 units) (Madrid)	HUB XC 438 The Art and Sci of Tech Consulting
CAS MA 528 Introduction to Modern Geometry	CAS PY 451 Quantum Physics 1	
CAS MA 531 Computability and Logic	CAS PY 452 Quantum Physics 2	
CAS MA 541 Modern Algebra 1		

Hub Requirements Legend:

QR1 = Quantitative Reasoning 1	WRI = Writing, Research & Inquiry	RIL = Research and Information Literacy
QR2 = Quantitative Reasoning 2	WIN = Writing-Intensive Course	TWC = Teamwork/Collaboration
SI1 = Scientific Reasoning 1	OSC = Oral and/or Signed Communication	CRI = Creativity/Innovation
SI2 = Scientific Reasoning 2	DME = Digital/Multimedia Expression	
FYW = First-Year Writing Seminar	CRT = Critical Thinking	

Notes:
a) Any requirement satisfied via AP/IB fulfills a **maximum of one Hub requirement** and students may need to replace missing Hub requirements.

b) Any requirement satisfied via transfer fulfills **zero Hub requirements** and students may need to replace missing Hub requirements.

c) For each of the following sets of courses, only **one** course can be taken for credit in each set due to the overlap of material:
  (1) ENG ME 403, ENG ME 404, ENG EC 402, ENG BE 404
  (2) ENG ME 303, ENG BE 436
  (3) ENG ME 306, ENG BE 425
  (4) ENG EK 103, CAS MA 242
  (5) ENG BE 403, ENG EC 401
  (6) ENG EK 381, CAS MA 381
  (7) ENG BE 428, ENG BE 478
  (8) CAS PY 313, CAS PY 314, CAS PY321 & 322